

O. HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the Fairmont Hotel complex, including runoff, drainage, and water quality based on available information obtained from a site-specific Geotechnical Assessment,¹ Phase I Environmental Site Assessment (ESA),² governmental agency reports, and site reconnaissance. In addition, this section identifies impacts related to hydrology and water quality that could result from the proposed project.

SETTING

CLIMATE

The climate of the project area and vicinity is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool, wet winters and relatively warmer, dry summers. San Francisco exemplifies a particular type of Mediterranean climate that, due to proximity of coastal waters, experiences cool, often cloudy summers, but with infrequent rainfall. The approximate annualized average high temperature is 64 degrees Fahrenheit (°F); the average low is 51°F. The mean annual rainfall in the vicinity of the project site, for the period between 1914 and 2008, was approximately 21.1 inches, the majority of which typically has occurred from October through April.³ During the period of record, annual rainfall has varied from 8.7 inches (1976) to 43.8 inches (1983), with a one-day high of 5.5 inches of precipitation on November 5, 1994.⁴ Analysis of long-term precipitation records indicates that wetter and drier cycles lasting several years are common in the region. Severe, damaging rainstorms occur at a frequency of about once every three years.⁵

STORMWATER RUNOFF AND DRAINAGE

The project site is fully developed and occupies an entire city block (approximately 2.6 acres) in a densely developed urban area. Almost the entire site is covered by impermeable surface, thus runoff is very high

¹ Treadwell & Rollo, 2008, *Geotechnical Feasibility Assessment for Fairmont Hotel*, September 8. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case No. 2008.0081E.

² ATC Associates, 2006, *Phase I Environmental Site Assessment*, September. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case No. 2008.0081E.

³ Western Regional Climate Center, *General Climate Summary: San Francisco Mission Dolores Station (047772)*, Available at: www.wrcc.dri.edu, Accessed: January 21, 2009.

⁴ Ibid.

⁵ Brown, William M. III, 1988, Historical Setting of the Storm: Perspectives on Population, Development, and Damaging Rainstorms in the San Francisco Bay Region, in *Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California*, Stephen D. Ellen and Gerald F. Wiczorek, Eds., U.S. Geological Survey Professional Paper 1434.

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and rapid. The site slopes downward toward the east along Sacramento and California streets and toward the north along Powell Street with elevations of approximately 276 feet above mean sea level (msl) along the western boundary, 205 feet above msl in the northeastern corner, and 228 feet above msl in the southeastern corner.⁶ The areas around the project site include mid- to high-rise hotels and residential structures. Storm drains are set into the curbs and gutters of Mason and Powell streets. Overall based on observations made during the site reconnaissance, the general grade of the project site is directed downward towards the east. Steep slopes and very high amounts of impermeable surface cover (streets, buildings, and sidewalks) result in rapid surface runoff and low infiltration into the soil.

San Francisco is atypical in that most of the city is served by a sewer system that handles the combined discharge of stormwater and wastewater effluent in the same system of pipes. The project site is served by this combined sewer system. The combined flows from the east side of San Francisco, which includes the Fairmont site, are transported to the Southeast Water Pollution Control Plant (SEWPCP), located on Phelps Street between Jerrold and Evans avenues. The SEWPCP⁷ treats wastewater from the east side of the San Francisco, which handles about 80 percent of the city's total wastewater flow.⁸

FLOOD MANAGEMENT

Flood risk assessment and some flood protection projects are conducted by federal agencies, including the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers. The flood management agencies and cities implement the National Flood Insurance Program (NFIP) under the jurisdiction of FEMA and its Flood Insurance Administration. Currently, San Francisco does not participate in the NFIP and no Flood Insurance Rate Maps (FIRMs) have been published by FEMA for the City and County of San Francisco. The project site is located at the summit of Nob Hill. No flood hazard is present. Because FEMA has not previously published a FIRM for the City and County of San Francisco, there are no identified SFHAs within San Francisco's geographic boundaries. FEMA has completed the initial phases of a study of San Francisco Bay. On September 21, 2007, FEMA issued a preliminary FIRM of San Francisco for review and comment by City agencies. FEMA has tentatively identified SFHAs along the city's shoreline and along San Francisco Bay, consisting of Zone A (as areas

⁶ Martin M Ron Associates, 2008, *Site Survey*, October 7. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case No. 2008.0081E.

⁷ Also referred to as the Southeast Wastewater Treatment Plant, or Southeast Treatment Plant.

⁸ San Francisco Public Utilities Commission, Treatment Plants, Available at: http://www.sfwater.org/mto_main.cfm/MC_ID/14/MSD_ID/117/MTO_ID/225, Accessed: January 21, 2009.

subject to inundation by tidal surge) and Zone V (areas of coastal flooding subject to wave hazards).⁹ The project site is not located within these areas.¹⁰ The City has submitted comments on the preliminary FIRM to FEMA. FEMA will publish a revised preliminary FIRM after completing the more detailed analysis that was requested in 2007 by the City. After reviewing comments and appeals related to the revised preliminary FIRM, FEMA will finalize the FIRM and publish it for flood insurance and floodplain management purposes.

In 2008, the San Francisco Board of Supervisors enacted a floodplain management ordinance (Floodplain Management Ordinance) to govern new construction and substantial improvements in flood zones of San Francisco, and authorized the City's participation in the NFIP. Specifically, the Floodplain Management Ordinance includes a requirement that any new construction or substantial improvement of structures in a designated flood zone must meet the flood damage minimization requirements in the ordinance. The City Administrator has published floodplain maps for the city. The project site is not located within a designated flood zone on the city's floodplain maps.¹¹

COASTAL HAZARDS

The coastal hazards of tides and waves, sea level rise, tsunami, and extreme high tides primarily affect areas near shorelines, unprotected by levees, with elevations of approximately 1.4 feet San Francisco City Datum (10.0 feet National Geodetic Vertical Datum 29¹²) or less.¹³ Estimates for sea level rise between the years 2000 and 2050 in San Francisco Bay range from approximately 0.33 foot to 1.25 foot.¹⁴ The proposed project is located approximately one mile from the nearest open water of San Francisco Bay

⁹ City and County of San Francisco, Office of the City Administrator, *National Flood Insurance Program Flood Sheet*, Available at: http://www.sfgov.org/site/uploadedfiles/risk_management/factsheet.pdf, Accessed: August 18, 2009.

¹⁰ Federal Emergency Management Agency, 2007, *National Flood Insurance Program. Preliminary Flood Insurance Rate Map, City and County of San Francisco, Panel 0120A*, September 21. Available at: http://www.sfgov.org/site/uploadedimages/risk_management/j120A.jpg, Accessed: August 18, 2009.

¹¹ City and County of San Francisco, 2008, *Interim Floodplain Map*, July. Available at: http://www.sfgov.org/site/uploadedfiles/risk_management/flood/Citywide.pdf, Accessed: August 18, 2009.

¹² The National Geodetic Vertical Datum (NGVD) 29 is the sea level datum of 1929.

¹³ San Francisco Planning Department, 2008, *San Francisco General Hospital Seismic Compliance Hospital Replacement Program Final EIR*, June, p. 329.

¹⁴ *Ibid*, p. 329.

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at an elevation of 200 feet above msl. The project site is not in an area subject to any coastal inundation hazards, such as tsunami run-up.¹⁵

GROUNDWATER CONDITIONS

The project site is located within the San Francisco Hydrologic Region. The site is within the 7,600-acre Downtown San Francisco Groundwater Basin which is bounded by San Francisco Bay to the north and east (including Nob and Telegraph Hills), Twin Peaks to the west and the bedrock outcrops of Bernal Heights to the south.¹⁶

Groundwater flow in the Downtown Basin generally flows from the southwest to the northeast following local topography.¹⁷ The Downtown Basin is composed of shallow unconsolidated alluvial deposits formed by tributaries to San Francisco Bay coming from Potrero Hill, Bernal Heights, Twin Peaks, and smaller local hills within the basin. Groundwater quality information for the Downtown Basin was not available in the State Groundwater Bulletin for the Downtown Basin (Bulletin). However, the Bulletin cites limited water quality data for the surrounding basins, indicating that the general character of groundwater for all basins beneath the entire San Francisco Peninsula are similar. Groundwater beneath the San Francisco Peninsula in general is a mixed cation¹⁸ bicarbonate type, and is considered generally “hard” (CaCO₃ concentrations between 121 and 180 milligrams per liter). Total dissolved solids vary from about 200 to over 700 parts per million. Groundwater within the Downtown Basin has high concentrations of nitrates and elevated chloride, boron, and total dissolved solids concentrations. Elevated nitrate, chloride, and total dissolved solids levels are most likely due to combination of leaky sewer pipes, fertilizer use, historic and current seawater intrusion, and connate water (trapped at the time of sediment deposition).¹⁹ Groundwater from the Downtown Basin is not used as a water resource in San Francisco.

¹⁵ City and County of San Francisco, 1974, *General Plan Community Safety Element: Map 6 20 Foot Tsunami Run-up Map*, Available at:

http://www.sfgov.org/site/uploadedimages/planning/Codes/General_Plan/images/csa_Map6.gif

¹⁶ California Department of Water Resources, 2004, San Francisco Hydrologic Region, Available at: http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/2-40.pdf, Accessed: January 21, 2009.

¹⁷ San Francisco Public Utilities Commission (SFPUC), 1996, San Francisco Groundwater Master Plan (draft), San Francisco Water Department, July.

¹⁸ Positively charged atom(s).

¹⁹ California’s Groundwater Bulletin 118, 2004, San Francisco Hydrologic Region, Downtown San Francisco Groundwater Basin, February 27.

According to the Phase I ESA²⁰ prepared for the Fairmont Hotel, estimated groundwater levels are located from 60 to 70 feet below ground surface (bgs), with shallow groundwater flow expected to follow the slope of the surface elevation towards the east. The site-specific Geotechnical Assessment,²¹ conducted for the proposed project, noted that groundwater was not encountered in borings up to depths of 249 feet bgs; however, it is likely that groundwater is present at the soil-bedrock interface (Elevation 249 feet at the western extent of the Tonga Room and Elevation 187.5 feet at the southwestern corner of the intersection of Sacramento Street and Powell Street), and in seams and fractures in the rock.²² The depth to groundwater on site may vary due to seasonal precipitation and infiltration rates.

SURFACE WATER AND GROUNDWATER QUALITY

The quality of surface water and groundwater in the vicinity of the proposed project is affected by past and current land uses at the site; water quality within the watershed is also affected by the composition of local geologic materials. Surface water pollution at the site and vicinity is expected to contain typical constituents of urban areas such as oil, grease, petroleum, metals (nickel, lead, and copper), dirt, bacteria, coliforms, solvents, trash, and other chemicals. The first flash events of rainstorms generate high loads of these pollutants that are carried into the combined sewer and treated before disposal; subsequent rainfall generates less pollutant loads. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards (RWQCB). The site is under the jurisdiction of the San Francisco Bay RWQCB (Water Board), which is responsible for implementation of State and federal water quality protection regulations in the vicinity of the project site. The Water Board implements the Water Quality Control Plan (Basin Plan),²³ a master policy document for managing water quality issues in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region.

²⁰ ATC Associates, Inc., 2006, op. cit., p. 9.

²¹ Treadwell & Rollo, 2008, op. cit., p. 2.

²² Ibid, p.2.

²³ San Francisco Bay Regional Water Quality Control Board, 1995 as appended through 2006, *Water Quality Control Plan*, December 25, Available at: www.swrcb.ca.gov/rwqcb2/basinplan.htm.

REGULATORY SETTING

This section provides a description of applicable regulations, plans, and policies for the proposed project.

FEDERAL AND STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Clean Water Act and State Porter-Cologne Water Quality Control Act

The National Pollution Discharge Elimination System (NPDES) storm water permitting program, under Section 402(d) of the federal Clean Water Act (CWA), is administered by the RWQCB on behalf of the U.S. Environmental Protection Agency (EPA). Section 402(d) of the CWA establishes a framework for regulating nonpoint source storm water discharges (33 USC 1251). The NPDES program objective is to control and reduce pollutants to water bodies from surface water discharges.

To meet federal Clean Water act and State Porter – Cologne Water Quality Control requirements the project site is served by the combined wastewater and stormwater sewer system and the flows are treated at the SEWPCP, operated by the SFPUC under a Water Board-issued NPDES permit (Order No. R2-2002-0073, NPDES Permit No. CA0037664). During dry weather, the SEWPCP treats an average flow of 65 to 70 million gallons per day (mgd), and can handle up to 150 mgd. Input consists mainly of municipal and industrial sanitary sewage and wastewater and is treated to a secondary level. The treated wastewater is then discharged to the Bay through the deep water outfall at Pier 80, immediately to the north of the Islais Creek Channel. During wet weather, when the combined flows exceed the capacity of the system and available storage, the combined flows are discharged to the Bay through 29 combined sewer overflow (CSO) structures; these overflows contain about 6 percent sewage and 94 percent storm water and are subject to “flow-through treatment” consisting of removal of settleable and floating solids. CSOs are located along the San Francisco Bay south of the Bay Bridge within the City boundary. The discharge of the combined stormwater and sewage occurs in accordance with the terms of the NPDES permit. Up to 10 CSO events per year are permitted from the CSO outfalls at, and north of, Islais Creek by the Water Board; one CSO event per year is permitted from the area of Yosemite Slough and south to the City boundary.²⁴

²⁴ San Francisco Public Utilities Commission (SFPUC), 2007, *Bayside Transport System*, Available at: http://sfwater.org/detail.cfm/MSC_ID/—14/MTO_ID/67/MC_ID/5/C_ID/3138, Accessed: November 8, 2008

LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

San Francisco Building Code Requirements

The San Francisco Department of Building Inspection (DBI) administers building codes that include provisions for managing drainage for new construction. The applicable codes for the proposed project are described below:

- Plumbing Code, Section 306.2: Roofs, inner courts, vent shafts, light wells, or similar areas having rainwater drains shall discharge directly into a building drain or sewer, or to an open approved alternate location based on approved geotechnical and engineering design.
- Building Code, Section 1503.4: All storm or casual water from roof areas which total more than 200 square feet shall drain or be conveyed directly to the building drain or storm drain or to an approved alternate location based on approved geotechnical and engineering design. Such drainage shall not be directed to flow onto adjacent property or over public sidewalks. Building projections not exceeding 12 inches in width are exempt from drainage requirements without area limitations.

San Francisco Stormwater Design Guidelines

SFPUC and the Port of San Francisco (Port) administer stormwater management programs developed in accordance with the federal CWA and a State of California NPDES permit. In November 2009, the Port and SFPUC released new stormwater management guidelines. SFPUC's *San Francisco Stormwater Design Guidelines* detail the engineering, planning, and regulatory framework for designing new infrastructure in a manner that reduces or eliminates pollutants commonly found in urban runoff.²⁵ These guidelines apply to both the separate storm sewer (MS4) and combined sewer areas of San Francisco.

Although the thresholds and strategies are the same for both combined and separate sewers, the performance measures are different. In combined sewer areas under SFPUC jurisdiction, applicants must reduce the flow rate and volume of stormwater going into the combined system by achieving Leadership in Energy and Environmental Design (LEED[®]) Sustainable Sites (SS) Credit 6.1, "Stormwater Design: Quantity Control." LEED[®] SS Credit 6.1 states that for sites where the existing imperviousness is greater than 50%, the project must "implement a stormwater management plan that results in a 25% decrease in the volume of stormwater runoff from the two-year 24-hour design storm."²⁶ The intent of LEED[®] SS Credit 6.1 is to limit disruption of natural water hydrology by managing stormwater runoff to reduce impervious cover, increase on-site infiltration, reduce or eliminate pollution from stormwater runoff, and eliminate contaminants.

²⁵ San Francisco Public Utilities Commission, 2009, San Francisco Stormwater Design Guidelines. Available: http://sfwater.org/mto_main.cfm/MC_ID/14/MSC_ID/361/MTO_ID/543. Accessed: February 8, 2010, p. 1.

²⁶ Ibid.

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The *San Francisco Stormwater Design Guidelines* encourage the use of Low Impact Design (LID) to comply with stormwater management requirements. LID applies decentralized, site strategies to manage the quantity and quality of stormwater runoff and includes best management practices such as cisterns, green roofs, bioretention basins and planters, permeable pavement, and infiltration trenches.

In addition, the *San Francisco Stormwater Design Guidelines* requires development of an operations and maintenance plan that identifies responsible parties, funding sources, maintenance activities and schedules for all BMPs. SFPUC adopted these guidelines on January 12, 2010, and recommended them for adoption by the San Francisco Board of Supervisors. Adoption and implementation of the design guidelines will improve San Francisco's environment by reducing pollution in stormwater runoff in areas of new development and redevelopment. SFPUC staff members are currently developing additional guidance for achieving LEED® SS Credit 6.1 in combined sewer areas.

Green Building Ordinance

On November 3, 2008, the San Francisco Building Code was amended to include Chapter 13C, "Green Building Requirements," known as the Green Building Ordinance.²⁷ The purpose of the requirements is to promote the health, safety, and welfare of San Francisco residents, workers, and visitors by minimizing the use and waste of energy, water, and other resources in the construction and operation of the city's buildings, and by providing a healthy indoor environment. The ordinance requires compliance with the applicable LEED® performance standards for new construction, Version 2.2; LEED® Credits SS 6.1 and SS 6.2 for stormwater management; and SFPUC's BMPs and *Stormwater Design Guidelines* (Section 1304C.0.3). For combined sewer areas, the applicable LEED® credit is "Stormwater Design: Quantity Control" (SS 6.1).

The code requires certain types of new and redevelopment projects constructed in San Francisco, including new Group B and Group M occupancy buildings (Section 1304C.2), and new large commercial buildings (Section 1304C.2.2) to meet green building standards developed by San Francisco's Green Building Task Force. In addition, both new Group B and Group M buildings and new large commercial buildings are required to incorporate water-efficient landscaping (LEED® WE1.1) and water conservation measures (LEED® WE3.2).

²⁷ San Francisco Building Inspection Commission Codes, Chapter 13C, "Green Building Requirements," Section 1304C.0.3. Available: www.sfenvironment.org/downloads/library/sf_green_building_ordinance_2008.pdf. Accessed February 8, 2010.

San Francisco Public Works Code

Currently, the federal CWA and subsequent amendment under enforcement authority of the EPA requires that publicly-owned treatment works regulate the discharge of industrial wastes into a sewer system subject to NPDES permit requirements. Therefore, the City has adopted detailed permit requirements for discharges to the combined sewer system. The discharge of any wastewater (such as dewatering from construction sites) would be subject to the requirements of Article 4.1 of the San Francisco Public Works Code, which regulates the quantity and quality of discharges to the combined sewer system. Order No. 158170 of the San Francisco DPW provides additional industrial waste discharge limits to augment those listed in Article 4.1 of the San Francisco Public Works Code.

Construction Period

A new Stormwater Discharge Controls for Construction Sites ordinance is in the planning stages and will likely be adopted by the City and County of San Francisco in the near future. Depending on the timing of the adoption of the ordinance and completion of the application process by the project sponsor, it is possible that this project would be subject to the requirements of this ordinance. This ordinance would provide for a more formal implementation of controls on construction period runoff, codify these requirements, and provide enforcement tools to ensure that construction period stormwater runoff from development projects is carefully controlled and employs environmentally sound Best Management Practices (BMPs).

Coverage under the NPDES General Construction Permit (Water Board Order No. 99-08-DWQ) is not required for projects in those areas of the city that drain to the combined sewer system; however, *all* construction sites must implement BMPs to prevent illicit discharge into the combined sewer. For sites served by the combined sewer system, including the project site, construction storm water discharges are subject to the requirements of Article 4.1 of the San Francisco Public Works Code, which incorporates and implements the City's NPDES permit and minimum controls described in a federal CSO Control Policy. Generally, City requirements include the development of a Storm Water Pollution Prevention Plan (SWPPP), SWPPP plan review by SFPUC, stormwater treatment measures, runoff monitoring, and frequent site inspections. The regulations also require the use of construction period (and operational period) BMPs, which are methods used on construction sites to keep pollutants, such as sediment and construction site debris, out of water conveyance systems, the treatment plants, and discharge points (San Francisco Bay and Pacific Ocean).

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The SWPPP for the proposed project has not been prepared at this time; in general it would need to describe the BMPs that the contractor would implement to prevent erosion and discharge of sediment and other pollutants in construction site stormwater runoff. The SFPUC staff reviews SWPPPs for construction projects. Though projects serviced by the combined sewer system are not subject to the terms of the Construction General Permit, Section A of the Construction General Permit describes in detail the requirements for a SWPPP, and the City and County San Francisco specifies that it should be used as a design guide. All construction sites must prevent illicit discharge into the combined sewer system. A SWPPP requires the following:

- A site map which defines the location and perimeter of the construction site;
- Identification of the existing and proposed buildings, lots, roadways, stormwater collection, and discharge points;
- Information on topography, both before and after construction, and drainage patterns across the project site;
- Construction site inspections, conducted by the permittee prior to anticipated storms, and after actual storms, to find areas contributing pollutants to stormwater runoff and to determine whether procedures described in the SWPPP are adequate and properly implemented. Each permittee must certify annually that construction activity complies with the terms as detailed in the General Permit.
- Construction Permit; and
- Certification that when construction activity is completed, all parts of the SWPPP have been completed, construction and equipment maintenance waste have been properly disposed of, and the site complies with all local stormwater management requirements.

The SWPPP shall also specify a monitoring program to be implemented by the construction site supervisor and shall include both dry and wet weather inspections by the site supervisor or their designated representative.

IMPACTS

SIGNIFICANCE THRESHOLDS

The thresholds for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the State *CEQA Guidelines*, which has been adopted and modified by the San Francisco Planning Department. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the project would result in a significant impact to hydrology and water quality. The project would have a significant hydrology and water quality impact if it would:

- O.a Violate any water quality standards or waste discharge requirements;
- O.b Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- O.c Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation on- or off-site;
- O.d Substantially alter the existing drainage pattern of the site or area, including alteration of the course of a stream or river, or substantially increasing the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- O.e Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- O.f Otherwise substantially degrade water quality;
- O.g Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map;
- O.h Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- O.i Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- O.j Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

The project site is not located within a dam failure inundation area or in an area protected by levees.²⁸ Therefore impacts associated with dam or levee failure are not addressed further in this Draft EIR.

PROPOSED PROJECT

The project sponsor proposes to demolish the existing Fairmont Hotel tower and construct a 26-story residential tower and a five-story mid-rise residential component, both above a five-story podium structure. The new residential tower would be located on the northeastern corner of the site above the podium and would enclose the north side of the podium courtyard. The mid-rise residential component would enclose a podium courtyard along the east and south sides. The proposed development would include four levels of below-grade parking, up to a maximum depth of approximately 40 feet below the Powell Street grade at the intersection of Powell and California Streets. Net new excavation of about 30 feet below the 10 foot depth of the existing basement level at the intersection of Powell and California

²⁸ Association of Bay Area Governments, 2003, *Dam Failure Inundation Map for San Francisco*, Available at: <http://www.abag.ca.gov/cgi-bin/pickdamx.pl>, Accessed: August, 2009.

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streets would occur with project implementation. The proposed project would seek to obtain LEED Gold Certification. In order to achieve LEED Gold certification, the proposed project could earn points by incorporating LID features and BMPs into the design to reduce stormwater runoff. Specific LID measures and BMPs have not yet been identified by the project sponsor, but LEED Gold certification is likely to include some measures to reduce or reuse runoff. The amount of impermeable surface area would remain unchanged with the proposed project.

IMPACT EVALUATION

Impact HY-1 The proposed project would not violate water quality standards or waste discharge requirements. (Less than Significant) [Criterion O.a]

The applicable waste discharge requirements include those under the Southeast Water Pollution Control Treatment Plant NPDES Permit (NPDES No. CA 0037664). Construction activities for the proposed project would include demolition of the existing podium and hotel tower, debris removal, and construction of a new podium structure, mid-rise residential component and residential tower. Demolition, excavation, grading, and construction on the project site would require temporary disturbance of surface soils and removal of existing on-site pavements and subsurface structures. During the construction period, excavation and grading activities would result in exposure of soil to water runoff, and entrainment of sediment in the runoff. An estimated 30,000 cubic yards of earth materials would be excavated and removed from the site in haul trucks. As excavation would mostly be in bedrock, much of the excavated material would be coarse particles. However, some of the material would be relatively mobile fine sediments (sand, silt and clay). Most excavation would occur in a below-grade pit in which the runoff would be contained. Water in the pit from rainfall and groundwater seepage would contain sediment. Removal of the pit water would require sediment removal before it could be discharged into the storm drains. Soil and debris on the haul truck tires exiting the site could be deposited on local streets and from there carried into the storm drain. As described in Chapter III, Project Description under “Project Schedule and Construction” (pp. III-32 to III-34), the majority of construction debris and materials would be loaded onto trucks within the interior of the existing building, rather than from public sidewalks or streets bordering the project site. The construction debris and materials would then be hauled off site. Therefore, soil stockpiles would be minimized on site.

Sediment in discharge water and soil and debris on the haul truck tires and deposited on local streets could cause increased sediment to be carried in off-site in the storm drain/sewer, clogging inlets and reducing the functional capacity of the pipes to convey flows. Mobilized sediment could accumulate in

new locations as runoff occurs, and result in blockage of flows, potentially resulting in increased localized ponding or flooding.

The delivery, handling, and storage of construction materials and waste, as well as the use of construction equipment, could introduce a risk for stormwater contamination that could impact water quality. Spills or leaks from heavy equipment and machinery can impact water quality through oil, grease, and hydrocarbon contamination. Construction equipment could include excavators, bulldozers, dump trucks, cranes, concrete mixers, and smaller equipment such as generators, pumps, and compressors. The construction staging area could also be a source of pollution because of the use of paints, solvents, cleaning agents, and metals during construction. If improperly handled, these pollutants could be transported in stormwater runoff that leads to San Francisco Bay. The potential for chemical releases is present at most construction sites. Once released, substances such as fuels, oils, paints, and solvents could be transported to nearby surface waterways and/or groundwater in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters. This would be a potentially significant impact.

However, the proposed project would be required to comply with the requirements of Article 4.1 of the San Francisco Public Works Code, which regulates the quantity and quality of discharges to the combined sewer system. These requirements include control of sediments and erosion and implementation of BMPs for construction materials and waste management and handling, in compliance with guidelines as provided by the City's Construction Site Runoff Pollution Prevention Procedures. A SWPPP would be prepared for the project to reduce pollution of surface water throughout the construction period of the project. The SWPPP would at a minimum include specific and detailed BMPs designed to mitigate construction-related pollutants. The California Best Management Practice Handbook produced by the California Stormwater Quality Association provides a source for up-to-date BMP technologies. At a minimum, BMPs would include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP would specify properly-designed centralized storage areas that keep these materials from flowing into the combined sewer systems. In addition, the stormwater runoff from the project site would be collected and treated at the Southeast Water Pollution Control Treatment Plan prior to discharge to San Francisco Bay. Treatment would be provided to the effluent discharge limitations set by the plant's NPDES Permit. Depending on the dates of the proposed project implementation, the project could be subject to the terms of the new Stormwater Control Ordinance. Through assumed compliance with these storm water requirements, construction period water quality impacts would be less than significant.

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During operation of the proposed project, runoff from the proposed landscaped areas may contain residual pesticides and nutrients. However, since the project would replace the existing podium courtyard with a new podium structure and courtyard of similar size, it would not increase runoff from the landscaped areas on the sites compared to existing conditions. Residual pesticides and nutrients therefore would not have a significant impact on water quality. Thus, impacts to water quality during operation of the proposed project would be less than significant.

Impact HY-2 The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. (Less than Significant) [Criterion O.b]

Groundwater, which fluctuates with the seasons, is estimated to occur at a depth of approximately 60 to 70 feet bgs at the project site. The proposed podium structure, mid-rise residential component, and residential tower would involve excavation of up to 30,000 cubic yards of earth material. The deepest point of on-site excavation would be 40 feet below grade at the intersection of California and Powell Streets. Due to the depth of the groundwater under the site, encountering substantial groundwater during construction is unlikely. Small seepage may occur but dewatering for groundwater removal alone is not anticipated (however, dewatering still would be needed to remove rainfall that collects in the pit). Any groundwater encountered during construction of the proposed project would be subject to requirements of the City's Industrial Waste Ordinance (Ordinance Number 199-77), requiring that groundwater discharges meet specified water quality standards before it may be discharged into the sewer system. The Bureau of Systems Planning, Environment, and Compliance of the SFPUC must be notified of projects necessitating dewatering, and may require water analysis before discharge. Should groundwater dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. The report would contain a determination as to whether or not a lateral movement and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, DPW would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring.

The project site is almost completely covered by the impervious surfaces of the existing development, which effectively prevents surface water infiltration into the soil. The footprint of the existing Fairmont Hotel complex would generally remain the same following the construction of the new residential tower, mid-rise residential component and podium structure. Thus, no measureable change in infiltration characteristics would result from the project. In addition, groundwater is not used as a drinking water supply in the City and County of San Francisco, so the proposed project would not affect public water

supply or water resource. The proposed project would not substantially increase the amount of impervious surface area on the site. Therefore the area of impervious surface on the project site would not increase to a degree that would noticeably affect the overall infiltration and groundwater recharge quantities in the project area. Project-related impacts to groundwater would therefore be less than significant.

Impact HY-3 The proposed project would not substantially alter the existing drainage pattern of the site or area that would result in substantial erosion, siltation, or flooding on- or off-site. (Less than Significant) [Criteria O.c and O.d]

The proposed project would not alter the course of a stream or river because none are present at or near the site. The surface drainage pattern of the site (that is, the urban condition dominated by impermeable surfaces of buildings, streets, alleys and sidewalks) would remain similar to the existing pattern with construction of the proposed project, with flows directed toward the existing combined sewer system. The quantity and rate of stormwater runoff from the project site that flows into the City's combined sewer system would not increase with project development because impermeable surface coverage of the site would differ little from the existing coverage. Because storm water flows from the proposed project could be accommodated by the existing combined sewer system, and because there would not be an expected increase in stormwater flows, the proposed project would not cause or add to down gradient flooding hazards. Because soil would be exposed during project construction, particularly site preparation, requirements to reduce erosion would be implemented during project construction, pursuant to Building Code, Chapter 33, Excavation and Grading. Impacts related to alteration of the existing drainage pattern would be less-than-significant with the project and the project would not result in substantial erosion, siltation or flooding on- or off-site.

Impact HY-4 The proposed project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or otherwise degrade water quality. (Less than Significant with Mitigation) [Criteria O.e and O.f]

The proposed project is within an area that drains to the City's combined sewer system. The existing Fairmont Hotel complex is served by a gravity-driven combined sewer system that flows to the Southeast Treatment Plant managed by the SFPUC and no changes to that system would be required as a result of the proposed project. The project would replace an existing podium structure and hotel tower with a new podium structure, mid-rise residential component, and residential tower. Due to the presence of the existing podium and hotel tower, the project site is currently almost entirely impervious. Total or peak runoff volume from the site could increase due to changes in the location and configuration of infrastructure as well as open space. An increase in total or peak runoff volume from the site compared to

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existing conditions could contribute to the frequency or severity of CSO events. Therefore, this impact would be potentially significant. However, implementation of **Mitigation Measure M-HY-4**, p. IV.O-16 at the proposed site would reduce total and peak flow stormwater runoff from the site by 25 percent as compared to existing conditions. Implementation of this measure would reduce total and peak flow to a less-than-significant level.

The proposed project would not substantially degrade water quality or contaminate the public water supply. All sanitary wastewater from the proposed building and stormwater runoff from the project site would flow into the City's combined sewer system, to be treated at the SEWPCP, prior to discharge into San Francisco Bay. Treatment would be provided pursuant to the effluent discharge limitations set by the plant's NPDES permit. Thus, during construction and operation, the proposed project would comply with all local wastewater discharge requirements. Overall, the proposed project would not provide substantial additional sources of polluted runoff or otherwise degrade water quality; therefore, the impact related to water quality degradation would be less than significant.

M-HY-4: Manage Peak Flow and Discharge Volume from Site

To manage peak flow and discharge volume from the site, the project sponsor shall prepare and implement a stormwater management design plan focusing on LID strategies. The project sponsor shall comply with all policies and regulations adopted by the City, including SFPUC's *Stormwater Design Guidelines*, which require a 25% decrease in the rate and volume of stormwater runoff from the 2-year, 24-hour design storm. Therefore, the design-level drainage plans shall demonstrate that, at a minimum, there will be a 25% decrease in the rate and volume of stormwater runoff to the combined sewer for the 2-year, 24-hour storm as compared to existing conditions. This will be achieved by using LID stormwater BMPs which may include, but not limited to:

- green roof,
- cistern,
- bioswale,
- bioretention basin,
- planter box,
- blue roof,²⁹
- dry well, and/or

²⁹ Rooftops that use flow controls atop downspouts to regulate the flow of runoff from the roof, thereby retaining and slowly releasing stormwater.

- other detention/storage facilities.

In addition, the final design team for the project shall review and incorporate as many concepts as practicable from *Start at the Source: Design Guidance Manual for Stormwater Quality Protection*.³⁰ SFPUC shall conduct project design review before the City's project approval occurs, to ensure that the impacts of the Project on the combined sewer system have been fully mitigated.

Impact HY-5 The proposed project would not place housing or structures that would impede or redirect flood flows within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map. (No Impact) [Criteria O.g and O.h]

The project site is not within a FEMA 100-year flood hazard area or in a mapped flood hazard zone according to the *San Francisco General Plan*. Since the site is not in a flood hazard zone, the proposed project would not expose people or residential and other structures to a substantial risk of residential flooding leading to loss, injury, or death involving mapped flooding hazards. Impacts related to placement of housing or other structures that would impede or redirect flood flows within a 100-year flood hazard area would not occur.

Impact HY-6 The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow. (Less than Significant) [Criterion O.j]

The project site is approximately 200 feet above msl and located approximately one mile inland from San Francisco Bay, Therefore, no impacts related to hazards of inundation by tides and waves, sea level rise, extreme high tides, seiche, and tsunami are possible. As noted in Section IV.N, Geology and Soils, the proposed project site is located in a steeply sloped fully developed area and is not within an area subject to landslides hazards.³¹ No impacts related to this issue would be expected to occur.

CUMULATIVE IMPACTS

Hydrology and water quality cumulative impacts are generally site-specific due to each project site having a different set of physical considerations limiting development and construction. The proposed project would not have a significant impact on groundwater recharge or depletion; alteration of local drainage patterns; alterations of a stream or river; placement of housing or structures in a 100-year floodplain; or

³⁰ Bay Area Stormwater Management Agencies Association. 1999. *Start at the Source, Design Guidance Manual for Stormwater Quality Protection*. Available: <http://www.basmaa.org>. Accessed October 2009.

³¹ City and County of San Francisco, 1974, *General Plan Community Safety Element: Map 6 20 Foot Tsunami Run-up Map*, Available at: http://www.sfgov.org/site/uploadedimages/planning/Codes/General_Plan/images/csa_Map6.gif

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inundation due to dam or levee failure, or tsunami, seiche, or mudflow; and therefore would also not contribute to cumulative impacts. Potential cumulative impacts would be related to runoff during construction and operation of the cumulative projects. As described in Section IV.A, Land Use, the proposed project and other cumulative future projects that are under construction, proposed, or reasonably foreseeable in the future in the project site vicinity include the 23 dwelling units at 850 Bush Street, 23 dwelling units at 851 California Street, 15 dwelling units at 1001 California Street, and 2 dwelling units at 915 Jackson Street, include renovations of existing structures and expansions of current uses and are located in an urban area that is covered with development. These would not substantially increase existing impervious surfaces, resulting in increased runoff.

While cumulative impacts likely would be less than significant, cumulative projects would continue to contribute to the occasional wet weather overflow events and street ponding in low lying areas to which Nob Hill contributes stormwater runoff. However, cumulative projects would be required to meet the City's stormwater reduction criteria as outlined in the San Francisco Stormwater Design Guidelines thereby reducing peak flow and volume loading into the combined sewer.

For cumulative effects on water quality associated with construction, all cumulative future projects on sites greater than one acre would be subject to the Construction General Permit, which requires the development and implementation of a SWPPP. Additionally, these cumulative projects would be required to undergo environmental review that would identify project-specific potential impacts related to hydrology and water quality and mitigation measures to reduce these impacts. The cumulative projects would be required to implement construction BMPs similar to those for the proposed project. Construction impacts on water quality would therefore be less than significant.

All cumulative projects would be required to comply with the San Francisco Public Works Code Article 4.1, NPDES requirements, and San Francisco Stormwater Design Guidelines. Therefore, cumulative impacts associated with potential violation of waste discharge requirements and water quality standards during construction and operational activities would be less than significant.

MITIGATION AND IMPROVEMENT MEASURES

Assuming compliance with the City's Public Works Code and assumed SWPPP requirements during the demolition and construction period, development of the proposed project would not have a substantial impact on water quality. Implementation of Mitigation Measures M-HY-4 would reduce potential total

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and peak flow stormwater runoff impacts to less-than-significant levels. Therefore, the proposed project would have a less-than-significant project-specific or cumulative effect on hydrology or water quality.

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